

Bonneville Power Administration
Fish and Wildlife Program FY98 Watershed Proposal Form

Section 1. General administrative information

Title **Focus Watershed Coordination-Kootenai River Watershed (Fy98)**

Bonneville project number, if an ongoing project 9608720

Business name of agency, institution or organization requesting funding
Montana Fish, Wildlife and Parks and the Confederated Salish and Kootenai Tribes

Business acronym (if appropriate) MFWP and CSKT

Proposal contact person or principal investigator:

Name	<u>Brian Marotz, Scott Snelson</u>
Mailing Address	<u>490 N. Meridian</u>
City, ST Zip	<u>Kalispell, Montana 59901</u>
Phone	<u>406-751-4546</u>
Fax	<u>406-257-0349</u>
Email address	<u>marotz@digisys.net, ssnelson@libby.org</u>

Subcontractors.

Organization	Mailing Address	City, ST Zip	Contact Name
We will be subcontracting stream reconstruction/design yet to be determined			
WestWater Consultants Inc.	1112 Catherine Lane	Corvallis MT 59828	Gary Decker
Watershed Consulting	643 Fulkerson Lane	Polson, MT 59860	Igor Suchomel
Wildland Hydrology Consultants	157649 U.S. Hwy 160	Pagosa Springs, CO 81147	Dave Rosgen

NPPC Program Measure Number(s) which this project addresses.

This project began as a result of language in the Columbia Basin Fish and Wildlife Program, Document 94-55 section 7.7 A and B, page 7-40 through 7-43. Measures 10.1B, 10.2A.2, 10.2B, 10.3B, 10.3B.12, 10.4B, 10.6C.1

NMFS Biological Opinion Number(s) which this project addresses.

Kootenai River White Sturgeon Biological Opinion (59 FR 45989)
NMFS Hydrosystem Operations for salmon recovery (56 FR 58619; 57 FR 14653)
Bull Trout Proposed Listing (62 FR 32268)
Westslope cutthroat trout and Interior redband trout recovery actions

Other planning document references.

Coordination with Libby Mitigation Program, Libby Area Conservancy District, North Cabinet Conservancy District, Lincoln Conservation District, Montana State Lands, NRCS, USFS (Eureka, Cabin Gulch, Libby, Troy), IDFG, and landowners: Purdy, Hansen, Marvel, Vredenberg, Kassler, Pluid, Fowler, Campbell (Letters of support available).

Subbasin.

Kootenai Subbasin, Upper Columbia. Coordination work is occurring in the mainstem and tributaries of the lower, middle and upper portions of the Kootenai River Drainage. A more complete subdrainage list can be found in Section 4.

Short description.

Fosters “grass roots” public involvement and interagency cooperation for habitat restoration to offset impacts to the fishery resources in the Kootenai River watershed. Establishes cost-share arrangements with government agencies and private groups.

Section 2. Key words

Programmatic					
Mark	Categories	Mark	Activities	Mark	Project Types
	Anadromous fish		Construction	X	Watershed
X	Resident fish		O & M	*	Biodiversity/genetics
*	Wildlife		Production	*	Population dynamics
	Oceans/estuaries	*	Research	*	Ecosystems
	Climate	*	Monitoring/eval.	*	Flow/survival
	Other	X	Resource mgmt		Fish disease
		*	Planning/admin.		Supplementation
			Enforcement	*	Wildlife habitat en-
		*	Acquisitions		hancement/restoration

Other keywords.

community involvement, watershed planning, private landownership, interagency coordination, international populations, native species recovery, westslope cutthroat trout, white sturgeon, bull trout, interior redband trout, metapopulation dynamics

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship
9404900	Kootenai Rer Ecosystem Improvements Study (KTOI)(IDFG)	Sister projects help assess techniques for watershed improvement
9401000	Excessive Drawdown Mitigation Program (EDDM)-Libby Reservoir	Drawdown Mitigation funds personnel and operations for many on-the-ground habitat improvement projects identified by the Focus Watershed Coordinator (FWC) who supervises EDDM. 0.2 FTE of FWC of is funded under EDDM.
8346700	Kootenai IFIM/Libby Mitigation	FWC provides public involvement in the watershed to help guide mitigation. FWC identifies mitigation projects, facilitates permitting and interagency, interstate, international cooperation. FWC provides technical expertise in project design.

9648701	Montana Focus Watershed-Flathead System (FWC-FR)	Sister project- Share information and techniques for public involvement and restoration techniques
9101903	Hungry Horse Reservoir Mitigation	Sister mitigation project on Flathead System- exchange information and techniques and occasionally share personnel.

Section 4. Objectives, tasks and schedules

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Compile information on limiting factors to native fish and wildlife production in the watershed area.	a	Utilize existing aquatic habitat surveys, riparian habitat surveys, aquatic population surveys, and other relevant biological and land use surveys. Use analytical techniques to identify and address limiting factors.
1		b	Identify gaps in knowledge that hamper sound management decisions. Coordinate, with "sister" mitigation projects and other agencies, to design and adaptively implement monitoring strategies to fill the gaps.
1		c	Determine influences of federal, state, tribal, and private land management on identified limiting factors.
1		d	Identify future research and data collection needs.
2	Coordinate cooperative implementation and funding of activities directed to watershed improvement by different interest groups and agencies in focus watershed area.	a	Determine the ownership and the influence of federal, state, tribal and private interests (i.e. water rights etc.) on the lands where limiting factors might best be effected
2		b	Facilitate the forming of local citizens working groups in the subbasins that contain the key limiting factors and provide professional expertise and resources necessary for the working group to create an implementable watershed plan
2		c	Once local subbasin plans are formed by working groups, identify potential fiscal and financial resources available and solicit the resources necessary to implement the local watershed plans.
2		d	Compile a list of human and fiscal resources that are potentially available for protection and recovery of habitat for the model watershed. Include potential

			federal, tribal state local government and other public resources as well as private sources.
2		e	Provide for the involvement of volunteers, landowners and educational institutions in the implementation of projects.
2		f	Provide coordination and leadership to integrate watershed-based fish and wildlife habitat improvement projects, research and monitoring activities in the Kootenai River basin.
2		g	Organize a technical advisory committee of the best qualified fluvial geomorphology and fish and fish/wildlife professionals from state, tribal and federal agencies and consultants to advise watershed groups and others performing stream alterations
2		h	Assist agencies, tribes and groups to find cooperative funding for habitat improvement projects.
2		i	Promote the formation of a network of professionals and citizens in each subbasin to help integrate landscape watershed planning. Opportunities exist in each of the three Montana Bull Trout Restoration Team's subbasins
3	Maintain a communication network among private and public groups, including planning and fund raising agencies, interested in fish and wildlife issues in the focus watershed area.	a	Provide quarterly reports and or newsletter/webpage to inform concerned parties of activities and progress of watershed activities.
3		b	Prepare annual progress report
4	Establish an effective watershed Monitoring and Evaluation process	a	Provide technical and grant writing assistance to the Kootenai River Network in their efforts to design a drainage-wide water quality inventory.
4		b	Provide leadership in identifying and soliciting funding for implementation of the water quality design
5	Transfer successful watershed planning and implementation processes to other watersheds in Montana and the northwest	a	Produce a document that will be used by districts or committees in the future as guide for watershed resource management. The document will include funding sources, criteria for rating proposals and list of expert advice sources.
6	Coordinate with local regional and	a	Contact the BPA and NWPPC Planning

	national planning and funding agencies e.g. NWPPC, BPA, NRCS, USDA and others to assure cooperative planning and implementation of model watershed planning		staffs as often as needed, but no less than once per quarter to keep them informed of the progress in planning for implementation process.
7	Negotiate and implement permanent easements and long-term management agreements in riparian corridors of key subbasins to protect investments in stream habitat improvements	a	Identify landholders and agencies that may be willing to create permanent and long-term riparian corridors for fish and wildlife adjacent to key watercourses.
7		b	Negotiate and coordinate agreements with state, federal tribal and private organizations to place these riparian corridors under permanent and long-term protection from threats to their natural function i.e. subdivision, channelization.

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	5/1997	8/2002	35.00%
2	5/1997	8/2002	20.00%
3	1/1997	10/2002	10.00%
4	2/1997	5/1999	3.00%
5	12/1999	10/2002	2.00%
6	1/1997	10/2002	5.00%
7	10/1997	8/2002	25.00%
			TOTAL 100.00%

Schedule constraints.

Achievement of objective associated with willingness of local governments, public support and permitting processes. Also CBFWA prioritization and NPPC approval.

Completion date.

2002

Section 5. Budget

FY99 budget by line item

Item	Note	FY98
Personnel	0.8 FTE Watershed Coordinator (0.2 FTE Project 9404900) 0.2 FTE Lakes Coordinator	\$30,481
Fringe benefits		\$7,823
Supplies, materials, non-expendable property	Office supplies, copies, computer software,	\$2,550
Operations & maintenance	Telephone and internet fees	\$1,560

Capital acquisitions or improvements (e.g. land, buildings, major equip.)	Purchase of Conservation Easements and Long-term management agreements for riparian corridor protect	\$20,000
PIT tags	# of tags:	\$ 0
Travel	Mileage (5400 miles @ .31/mile)	\$1,674
Indirect costs	17.2 percent	\$14,609
Subcontracts	Stream design, land appraisal consulting and heavy equipment operation	\$20,850
Other		\$ 0
TOTAL		\$104,938

Outyear costs

Outyear costs	FY99	FY00	FY01	FY02
Total budget	\$100,000	\$100,000	\$100,000	\$100,000
O&M as % of total	1.50%	1.50%	1.50%	1.50%

Section 6. Abstract

The Kootenai Drainage in Montana experienced a severe decline in the range and number of four of five native trout species (bull trout, westslope cutthroat trout, mountain whitefish and inland redband trout). Endangered species (ESA) protection is currently afforded the native white sturgeon and bull trout in the drainage and the USFWS have been petitioned to list the inland redband trout. Petition for listing is expected for westslope cutthroat trout in the entire drainage and burbot are likely candidates below Libby Dam.

Considering:

- 1) All major listed and potentially listed ESA fish species in the drainage exist in populations that are both international and interstate in nature and long term persistence of these stocks will rely heavily on interstate and international cooperation and coordination and;
- 2) The current rapid rate of subdivision and land management conversions in key subbasins taking place in the next 2 to 10 years and;
- 3) Local Focus Watershed plans have the best chance to be implemented successfully and are likely to be the most cost-effective long term alternatives for native species recovery, particularly in the light of current anti-government sentiments of the local populous and;
- 4) Opportunity exists to cost-effectively increase the chance of persistence of weak but recoverable stocks of westslope cutthroat trout, mountain whitefish and bull trout in the Kootenai through watershed based habitat improvement and channel reconstruction efforts.

It is therefore important for the FWP to fully fund the Kootenai Focus Watershed Project for the remainder of FY98 through FY2002.

Section 7. Project description

a. Technical and/or scientific background.

The Kootenai Drainage in Montana has experienced a severe decline in the range and number of four of five native trout species (bull trout, westslope cutthroat trout, mountain whitefish and inland redband trout). The status of the fifth native trout, the pygmy whitefish, in the system, is not well studied. Mountain whitefish populations in Koocanusa have declined to low levels when compared with those of the mid 1970's.

White Sturgeon, also native to the drainage, are currently listed under ESA provisions. Native burbot (also known as ling, *Lota lota*) once provided a popular fishery throughout the Kootenai system. The burbot fishery appears to have begun to decline in the early 1960's (Hensler 1996). But population declines have continued to occur since the construction of Libby Dam in 1972 (Paragamian 1993). The once robust population appears to persist at very low levels in both the middle and lower Kootenai.

With the construction of Libby Dam in 1972, the Kootenai River in Montana was effectively isolated into three population segments (only downstream gene flow is likely): the upper Kootenai, upstream of Libby Dam; the middle Kootenai, between Libby Dam and Kootenai Falls; and the Lower Kootenai below Kootenai Falls to Kootenai Lake in British Columbia (Montana Bull Trout Scientific Group 1996). In the drainage, three of the five native trout species are likely candidates for listing by the US Fish and Wildlife Service as federally protected endangered species over the next few years (petitions for listing have already been submitted for bull trout which was determined to warrant listing, inland redband trout which have been petitioned for listing and ruled not warranted for lack of population and genetic data, and petition for listing for westslope cutthroat trout listing is expected shortly).

In the upper Kootenai declines in numbers and in the range of whitefish and westslope cutthroat trout have been severe when compared to the late 1970's and 1980's (MFWP, CSKT and KTOI 1997; Snelson et al. 1997, Marotz et al. 1988, Huston et al. 1984). ESA listing for either species may be warranted in this segment.

Westslope cutthroat trout has experienced a precipitous decline in the middle Kootenai since the mid 1960's when catch rates were among the best in the state. Percent composition of westslope cutthroat has gone from 44% in 1973 to less than 5% in 1993 and 1994 (Hensler 1996). ESA consideration for westslope cutthroat trout will likely include the middle Kootenai.

Bull trout populations in the upper Kootenai (including the Kootenai River in British Columbia) appears to be stable (Westover 1997, Dalbey et al. 1997). The population in Canada is numerically the strongest metapopulation in Montana. Recent spawning redd surveys and radio telemetry studies performed jointly by BC Environment and Montana Fish, Wildlife and Parks (BPA projects 9401000, 8346700) and a migration trap operated by BC Environment on the Wigwam River, indicate that this transboundary population may be the strongest bull trout metapopulation in the world. A major concentration of spawning in the upper Kootenai occurs in a previously roadless, 27 km of the Wigwam River in British Columbia (the headwaters of the Wigwam River reach into Montana). A long-term timber harvest program began in the Wigwam drainage in 1997. Primary haul roads were constructed into the drainage in the summer of 1997 and timber harvest and additional road construction is expected to begin this winter.

Cursory helicopter redd surveys conducted by jointly by MFWP (BPA project 9401000) and BCMOE, in October 1997, of other drainages in the Upper Kootenai system, did not reveal any other major spawning concentrations in the areas where they were most expected.

While the Upper Kootenai population is considered to be quite strong, concentration of a large segment of the reproductive capability of the drainage is directed to a relatively tiny portion of the system. This potentially places the population at great risk. The risk is heightened considering the construction of new roads and increased timber harvest in the Wigwam drainage.

While historic population trend data for bull trout in the other two segments of the Kootenai drainage are largely unavailable, both segment's populations are in danger from hybridization, subdivision, dam operation and illegal harvest (Montana Bull Trout Scientific Group 1996). The lower Kootenai bull trout population in Montana is largely influenced by management of both Idaho and British Columbia because of this population's migration patterns. Coordination between Montana, Idaho and British Columbia will be essential for the persistence of Bull Trout in the lower Kootenai.

Key subbasins within the Kootenai drainage, which are critical to native species restoration, are experiencing a rapidly progressing change in land ownership and management patterns. Subdivision and subsequent residential development of much of the agricultural and timber lands adjacent to waterways in the drainage likely poses one of the greatest threats to weak but recoverable stocks of trout species mentioned above. Plum Creek Timber Company, a major landholder in the Kootenai system is currently divesting itself of large tracks of its lakeshore and streamside holdings basin-wide. Growth of small tract development throughout the Tobacco River valley and its tributaries is occurring at a record rate. This is also true for the majority tributaries to the middle Kootenai.

Immediate to short-term action is going to be required to protect stream and riparian corridors through many of these areas if cost-effective recovery efforts are to be implemented. Delaying the commitment of resources to establish permanently protected stream corridors through easement, long-term management agreements and purchase of fee title, is certain to drastically balloon the cost and possibility of long-term persistence of native species in much of its range.

Even with the rapid subdivision of the developable lands in the drainage, the Kootenai drainage is relatively sparsely populated. Greater than 70% of the land base in the Montana portion of the drainage is publicly owed. Much of the 34,490 km² drainage is quite remote. State and Federal regulations regarding natural resources are often difficult to enforce given both geographic location and the tendency for much of the public in the region to be indifferent or hostile to government directed initiatives. This is particularly true of federally directed programs.

If recovery of the fisheries resources mentioned above are to be successful in the drainage, locally lead recovery plans are going to provide the greatest chance for success. Without local support it is unlikely that local governments and individual citizens are going to allow government initiatives to be implemented without prohibitively costly monitoring and oversight.

Considering :

- 1) All major listed and potentially listed ESA fish species in the drainage exist in populations that are both international and interstate in nature and long term persistence of these stocks will rely heavily on interstate and international cooperation and coordination and;
- 2) The current rapid rate of subdivision and land management conversions in key subbasins taking place in the next 5 to 10 years and;
- 3) Local lead subbasin watershed plans have the best chance to be implemented successfully and are likely to be the most cost-effective long term alternatives for native species recovery, particularly in the light of current anti-government sentiments of the local populous and;
- 4) Opportunity exists to cost-effectively increase the chance of persistence of weak but recoverable stocks of westslope cutthroat trout, mountain whitefish and bull trout in the Kootenai through watershed based habitat improvement and channel reconstruction efforts and;
- 5) Montana Fish, Wildlife and Parks Focus Watershed Program has been successful in coordinating and helping form locally lead subbasin watershed working groups for lower Grave Creek (critical bull trout spawning tributary), Sinclair Creek (critical westslope cutthroat spawning tributary), and has coordinated efforts linking city, county, conservation districts, conservancy district and FEMA

resources to develop long -term stream recovery projects on Flower and Parmenter Creeks (potential westslope cutthroat and bull trout spawning and rearing tributaries) of the middle Kootenai. Kootenai Focus Watershed has also negotiated with individual landowners to protect the riparian corridors, through easement and long-term management agreements on over ten miles of critical spawning and rearing stream habitat for westslope cutthroat and bull trout on Therriault, Young and Sinclair Creeks in the upper Kootenai and negotiated a bull trout exclusion partnership between the Glen Lake Irrigation District, the USFS and BPA on Grave Creek.

It is clear that Kootenai Focus Watershed program has, in its first six months (program was staffed May 1, 1997), provided very promising progress toward furthering the aim of integrated watershed planning and implementation. The program should be funded for a five year trial period with support sufficient to fund 1 FTE (plus operating budget i.e. mileage, postage etc.) In addition approximately \$50,000/ year should be allocated to the program to allow the program to leverage, from other sources, resources for establishing permanent stream/riparian corridors in critical subbasins.

b. Proposal objectives.

1. Identify limiting factors to native fish and wildlife production in the watershed area. FWC-KR will help direct limiting factor identification of Libby Dam (LDM) and Libby Reservoir Excessive Drawdown Mitigation (EDDM) programs (project # 834700 and 9401000) and help design

In FY98 FWC-KR will supervise EDDM's evaluation (3rd year of a 5 year test) of the use of remote site incubators (RSI's, Bartlett and others 1995, Dimmett and Fuss 1994, Wampler and Manuel 1992,) as a recovery technique to imprint westslope cutthroat to specific tributaries to Libby Reservoir. The objective of the study is to determine if recruitment of 0-2 year old westslope cutthroat from reservoir tributaries is limiting the reservoir population and to determine if artificial imprinting of eyed westslope cutthroat trout eggs can be an effective technique to reestablish spawning runs in tributaries where habitat degradation or local extirpation due to random events has caused an under utilization of adequate quality spawning habitat. Approximately 50,000 fry have been incubated and released directly into Young Creek (a tributary to Libby Reservoir) in each of the past two spawning seasons. Baseline population estimates have been conducted in both of the last two years in the creek and a spring upstream migration trap was operated in 1995.

An upstream/downstream screw type migration trap will be operated by EDDM (supervised by FWC-KR) in the spring and summer of 1998 to determine the outmigration numbers, patterns and age-class structure of westslope cutthroat trout and to have a second measure of pretreatment upstream migration of spawning adults from the reservoir.

In the following fiscal years the RSI techniques will be expanded to include other tributaries where habitat quality has been improved through channel reconstruction and bank stabilization/revegetation projects (Sinclair, Therriault, Barron, Canyon Creeks etc.). The adaptive management objective of the larger scale RSI deployment, that will include several tributaries, is to increase the reservoir population to such an extent that the increase can be statistically verified with the LDM annual gill net series.

Similarly, FWC-KR will supervise EDDM and LDM crews in performing baseline fish population and channel geomorphological data collection on riparian fencing/revegetation and channel reconstruction projects on Sinclair, Therriault, and Grave Creeks and operate a spring migration trap on Sinclair Creek, where a migration barrier was removed by EDDM in Fall 1997, to determine if: 1) returning degraded channels to a stable form increases standing crops of native fish (specific to life history segment) 2) an increase in standing stock in tributaries provides an improved fishery in the reservoir. 3)

certain stream types (Rosgen 1996) provide greater return of recruits per unit cost for stream reconstruction. All results of these measures will be reported quarterly.

Other stream reconstruction/improvement projects are likely to be identified and projects implemented through the FWC-KR in FY98 that are not mentioned above. Projects will be initiated after an "adaptive management" strategy for evaluation is outlined. Cooperative arrangements will be made through EDDM, LDM and the US Forest Service to collect, at a minimum on all project sites, a pre- and post-treatment 1) Rosgen (1996) level III stream geomorphic evaluation and 2) fish population estimates.

FWC-KR will regularly search the literature for promising public involvement and stream recovery techniques and will maintain an open file bibliography of such material as part of LDM Kootenai Watershed Programmatic Habitat and Physical Parameter Review (available via the Internet by June 1998). In addition, a request for needed research will be submitted to LDM, EDDM and NWPPC on a yearly basis.

2. Coordinate cooperative implementation and funding of activities directed to watershed improvement by different interest groups and agencies in focus watershed area.

FWC-KR will prepare a report listing the most likely key limiting factors and the location of those limiting factors, for native fishes in the drainage, after a review of the literature and discussions with the major agencies and landowners influencing the watershed. FWC-KR will prepare, in cooperation with MFWP's Montana River Information System (MRIS-streamnet) a key limiting factor map for the major species of concern, listing the key limiting factors by stream and species and ranking streams by recovery potential for each species. Land ownership layers will be added to identify stakeholders in given stream segments. Maps will be made available over the Internet and annual reports for all interested parties.

From this map priority target areas for recovery efforts will be identified. Stakeholders for the target areas will be identified in discussions with local residents and agency personnel. Formation of locally based watershed working groups that represent a majority of local interests will be fostered and professional expertise will be provided to empower these working groups to 1) Develop mid and long term watershed plans 2) Solicit resources to implement plans (see tasks under objective 2)

Objectives 3-7 are outlined in the objective and tasks Section 4. Objective 7. Negotiate and Implement permanent easements, fee purchase and long term management agreements in riparian corridors will be necessarily dynamic. Criteria for these agreements will be developed in January and February of 1997 and presented to NWPPC and the Montana Fish and Game Commission for their approval. The rather limited amount of resources will necessitate that the allocated moneys be used as seed money to leverage resources from other sources.

c. Rationale and significance to Regional Programs.

This project is dovetailed to the Libby Mitigation Program and Libby Excessive Drawdown Program. The FWC complements these programs through coordination with public and private interests. Essentially these three programs function as one but were separated for administrative purposes and differing project goals and histories. The structure of human resources and project objectives reduces bureaucratic process (as much as possible given external pressures) and maximizes on-the-ground actions.

d. Project history

This project began in 1997 and has only existed for a portion of a year. In its first six months, Montana Fish, Wildlife and Parks Focus Watershed Program has been successful in coordinating and helping to form locally-lead subbasin watershed working groups for lower Grave Creek (a critical bull trout spawning tributary), and Sinclair Creek (a critical westslope cutthroat spawning tributary). FWC-KR has coordinated efforts linking city and county governments, conservation districts, a conservancy district, and FEMA resources to develop long -term stream recovery projects on Flower and Parmenter Creeks, potential westslope cutthroat and bull trout spawning and rearing tributaries of the middle Kootenai. Kootenai Focus Watershed has also negotiated with individual landowners to protect the riparian corridors, through easement and long-term management agreements on over ten miles of critical spawning and rearing stream habitat for westslope cutthroat and bull trout on Therriault, Young and Sinclair Creeks in the upper Kootenai. FWC-KR in conjunction with Montana Fish, Wildlife and Parks management, has also negotiated a bull trout exclusion partnership between the Glen Lake Irrigation District, the USFS, and BPA, on Grave Creek.

FWC-KR has coordinated an effort between the Libby Area Conservancy District, the Army Corps of Engineers, North Cabinet Conservancy District, the United States Forest Service and the Federal Emergency Management Agency, to collect data needed for a flood plain remapping for Libby, Flower and Parmenter Creek. This effort will be the single most important tool for protecting the riparian corridors from subdivision, one of these creeks' greatest threats.

e. Methods.

Given the unique stakeholders and personal dynamics of each subbasin within the Kootenai drainage it seems unlikely that a single uniform approach to establishing local watershed groups is going to be successful. Local watershed plans are going to have to be dynamic to meet the needs of local communities as well as promote the persistence of target fish and wildlife species. The Model Watershed Plan for the Lemhi, Pahsimeroi and East Fork of the Salmon River (Idaho Soil Conservation Commission 1995) will be used as a template for process but it is expected that significant deviation will occur according to differing resource needs of the Kootenai drainage. The focus watershed coordinator will be vigilant in guiding watershed plans so they include specific measurable positive outcomes for fish and wildlife resources.

Methods for on-the-ground habitat and passage projects and project monitoring can be found on the project form for the Libby Mitigation Program (project # 8346700).

f. Facilities and equipment.

The Libby Field Station of MFWP has two office buildings containing office space, wet lab and computer equipment sufficient for project staff. A workshop and boatshed are situated near the office buildings on the state property. State vehicles and work boats are available for project use. Electrofishing equipment (boat-mounted, bank and backpack units), surveying and GPS equipment, SCUBA gear, lake and river sampling devices for sampling/monitoring all trophic levels are available at the site. A bobcat with apparatus designed for habitat enhancement work is time-shared with the Libby and Hungry Horse Mitigation Programs. Minor tools and equipment are included in the project budget.

g. References.

Bartlett, H. , B. Jateff, G. West, D. Dinsmore. 1995. Remote Site Incubation of Wells Stock Summer Steelhead Eggs In Methow River. Washington Department of Fish and Wildlife Progress Report, Hatchery Division

- Dalbey, S.R., J. DeShazer, L. Garrow, G. Hoffman, and T. Ostrowski. 1997. Quantification of Libby Reservoir levels needed to enhance reservoir fisheries. Methods and data summary, 1988-1996. Draft Report. Montana Department of Fish, Wildlife and Parks - Region 1. Prepared for Bonneville Power Administration. Project No. 83-467.
- Dimmett K. and H. Fuss. 1994. Evaluation of Remote Site Incubators as an Enhancement Tool. Progress Report for 1994. Washington Department of Fish and Wildlife.
- Fraley J.J., B. Marotz, J. Decker-Hess, W. Beattie and R. Zubic. 1989. Mitigation, compensation and future protection for fish populations affected by hydropower development in the upper Columbia System, Montana, USA. *Regulated Rivers: Research and Management*. 3:3-18.
- Greenback, J. 1941. Selective poisoning of fish. *Transactions of American Fisheries Society*. 70:80-86
- Huston, J. E., P. Hamlin and B. May. 1984 Lake Koocanusa Investigations – Final Report 1972-1983. Montana Department of Fish, Wildlife and Parks – Region 1 in cooperation with Seattle District ACOE.
- Idaho Soil Conservation Commission. 1995. Model Watershed Plan for the Lemhi, Pahsimeroi and East Fork of the Salmon River. BPA Public Information Center- CKPS-1, Portland OR, DOE/BP-2772.
- Marotz, B.L., and J. Fraley. 1986. Instream flows needed for successful migration, spawning and rearing of rainbow and westslope cutthroat trout in selected tributaries of the Kootenai River. Montana Department of Fish, Wildlife and Parks. Prepared for Bonneville Power Administration. Project Number 85-6.
- Marotz, B.L., B. Hansen, and S. Tralles. 1988. Instream flows needed for successful migration, spawning and rearing of rainbow and westslope cutthroat trout in selected tributaries of the Kootenai River. Montana Department of Fish, Wildlife and Parks. Prepared for Bonneville Power Administration. Project Number 85-6.
- Marotz, B.L., D. Gustafson, C. Althen and B. Lonen. 1996. Model development to establish integrated operational rule curves for Hungry Horse and Libby Reservoirs - Montana. Montana Department of Fish, Wildlife and Parks - Region 1. Prepared for U.S. Department of Energy - BPA. Project number 83-467
- MFWP, CSKT and KTOI. 1997. Fisheries mitigation and implementation plan for losses attributable to the construction and operation of Libby Dam. **Draft Report:** Montana Department of Fish, Wildlife and Parks, Confederated Salish and Kootenai Tribes and the Kootenai Tribe of Idaho. Prepared for Bonneville Power Administration. Project No. 83-467.
- Perry S. and J. Huston. 1983. Kootenai River Investigations Final Report 1972-1982. Section A. Aquatic Insect Study. Montana Fish, Wildlife & Parks in cooperation with the U.S. Army Corps of Engineers. 112p.
- Rosgen D.L. 1996. Applied fluvial morphology. Wildland Hydrology. Pagosa Springs, CO. Printed Media Companies, Minneapolis, MN.
- Snelson, S., C. Muhlfeld and B. Marotz. 1997. Draft Report. Excessive Drawdown Mitigation. Montana Fish, Wildlife & Parks. Filed with Bonneville Power Administration, Portland, OR.

Wampler, P.L. and J.L. Manuel. 1992. A Test of Remote Site Incubators Using Green, Untreated Fall Chinook Salmon Eggs. US Fish and Wildlife Service, Western Washington Fisheries Resource Office, Olympia, WA.

Section 8. Relationships to other projects

The Kootenai Focus Watershed program is currently staffed by Scott Snelson. Snelson, prior to taking this position, was the Project Leader for MFWP's Libby Reservoir Excessive Drawdown Mitigation Program (EDDM) since its inception in January of 1995. One of EDDM's primary task during that period was to identify limiting factors for native fishes and develop and test innovative techniques for native species recovery in the drainage as well as identify potential mitigation actions that might be undertaken to offset fisheries losses due to the construction of Libby Dam. Snelson's background as lead legislative liaison and grant writer with Montana's largest conservation organization (two years working with instream flow and water rights issues), combined with his Masters degree in Biology from Montana State University (thesis project focused on evaluating techniques to initiate rainbow spawning runs in a stream where new access was created), level II Rosgen stream geomorphology training, and his extensive knowledge of the Kootenai drainage, make him extremely well suited for both organizing and empowering local watershed groups and providing sound technical direction for geomorphic and biological issues.

Montana's Focus Watershed program plays a crucial role in directly integrating not only six FWP projects but also uses those FWP resources to leverage resources for watershed protection and restoration from the US Forest Service, the Natural Resource Conservation Service, the US Fish and Wildlife Service, the Federal Emergency Management Agency, Army Corps of Engineers, Montana Department of Transportation \$4,200 cost-share Sinclair Creek), two conservancy districts and a conservation district as well as Montana Fish, Wildlife and Parks. Added, FWP resources have given the FWC-KR the opportunity to solicit the resources of the private Kootenai River Network (\$5,000 Grant for Grave Creek Project), Montana Chapter American Fisheries Society (\$5,000 for Grave Creek project), dozens of private landowners and several local rod and gun organizations.

Human resources and funding for most of the on-the-ground actions are provided by the Libby Mitigation Program and the Excessive Drawdown Mitigation Program. This project provides coordination for both. FWC-KR is most closely connected with Libby Reservoir Excessive Drawdown Mitigation (EDDM, Project #9401000). The FWC-KR biologist serves as the primary supervisor for this program. This arrangements allows the EDDM to be successfully staffed with one senior fish technician and 1.5 junior technicians. The project biologist duties necessary for a successful, scientifically rigorous EDDM program, requires specialized data analysis and scientific and geomorphic design. These duties are cost-effectively provided by the FWC-KR biologist without the need for a separate EDDM project biologist. Conversely, EDDM technicians provide the essential biological, geomorphic and technical information needed for identifying limiting factors in watershed analysis and in monitoring implemented projects, as well as carrying out the day-to-day implementing of watershed based habitat projects.

FWC-KR is also closely integrated with Libby Mitigation (Project #8346700). FWC-KR has been responsible for providing watershed-based projects for consideration in the Libby Mitigation Plan. FWC-KR provides regular geomorphic and biologic advice for habitat project planning and facilitates public input into the Mitigation plan. Libby mitigation personnel regularly provide the human resources essential for data collection and project implementation.

FWC-KR will be working closely with Hungry Horse Habitat Mitigation (Project # 91193) to test and refine innovative techniques for restoring native stocks. Personnel are exchanged when needed larger crews are needed for specific projects.

FWC-KR will be integrating the Montana River Information

Section 9. Key personnel

BRIAN MAROTZ

Fisheries Program Officer (0.10 FTE)
490 North Meridian Road
Kalispell, Montana 59901
Phone (406) 751-4546
Fax (406) 257-0349
E-mail marotz@digisys

Education

Master of Science – Fisheries Management
Louisiana State University - Baton Rouge, Louisiana.
Estuarine Biology

15 Credits: Gulf Coast Research Institute
Ocean Springs, Mississippi.
Marine Science

Bachelor of Science – Biology (Aquatic Sciences)
University of Wisconsin - Stevens Point, Wisconsin.
Freshwater Biology

16 Credits: S.E.A. Semester at Sea, Boston University
Woods Hole, Massachusetts
Marine Biology

**Professional
experience**

1991-Present Fisheries Program Officer, Montana Fish, Wildlife & Parks
Kalispell, Montana
Duties: Supervise Special Projects Office, Hydropower Mitigation and Focus
Watershed Programs.

1989 – 1991 Fisheries Biologist, Montana Fish, Wildlife & Parks
Kalispell, Montana
Duties: Hungry Horse Reservoir Research, Develop Hungry Horse Mitigation
Program, Computer Modeling Flathead and Kootenai Drainages, Develop
Integrated Rule Curves (IRCs) for Montana Reservoirs.

1985 – 1989 Fisheries Biologist, Montana Fish, Wildlife & Parks
Libby, Montana
Duties: Libby Reservoir Research, Kootenai Instream Flow Project, Computer
Modeling Flathead and Kootenai Drainages, Develop Integrated Rule Curves
(IRCs) for Montana Reservoirs.

1984 – 1985 Research Associate, Louisiana State University - Baton
Rouge, Louisiana
Duties: Estuarine Research to control salt water encroachment to Estuarine
Marsh on the Sabine National Wildlife Refuge. Developed Operating Plan for
Water Control Structures to Allow Migration of Catadromous Fish and
Crustaceans

Publications

Pertinent Publications Listed in this Document

Awards

1994 Governor's Award for Excellence in Performance as an Employee of the State of Montana

1994 Director's Award for Excellence as an Employee of Montana Fish, Wildlife & Parks

*1989 Certified Fisheries Scientist
American Fisheries Society*

Scott Snelson

Montana Fish, Wildlife & Parks
475 Fish Hatchery Road
Libby, Montana 59923
Phone (406) 293-4713
Fax (406) 293-6338
E-mail ssnelson@libby.org

Education

Master of Science - Biology
1992 – 1996 Montana State University Bozeman, Montana
3.8 GPA

Bachelor of Science - Fish and Wildlife Management
Montana State University Bozeman, Montana

Wildlands Hydrology-Short Courses Pagosa Springs, Colorado
Applied Fluvial Geomorphology July 1996
River Morphology and Application August 1997

Performance Evaluation Training-Montana Dept. of Administration
Geographic Information Systems Training-MT Chapter Amer. Fish. Soc.
Clean Water Act Training- US Forest Service and MT Dept of Env. Qual.
PADI certified Advanced SCUBA diver

Professional experience

1997 – current Focus Watershed Coordination Biologist
Montana Fish, Wildlife & Parks Libby, Montana

Duties: Coordinate formation of local watershed working groups for development of “grass-roots” watershed plans and facilitate implementation of plans integrating state, federal, tribal and private resources.

1995-1997 Project Leader-Libby Reservoir Excessive Drawdown Mitigation
Montana Fish, Wildlife & Parks Libby, Montana.

Duties: Identify key limiting factors for native fish stocks in Libby Reservoir,

9608720 Focus Watershed Coordination-Kootenai River Watershed (Fy98)

develop and implement mitigation actions for the excessive drafting of Libby Reservoir and provide implementable mitigating measures for the construction of Libby Dam to be for included in the Libby Dam mitigation plan.

1992-1994 Graduate Research Assistant

Montana State University Bozeman, Montana.

Duties: Conducted research on the initial use of a newly accessible spawning stream by adult rainbow and brown trout and examined the use patterns of the stream by their progeny.

1993 Creel Survey Clerk

Montana Fish, Wildlife and Parks Townsend, Montana

Conducted creel surveys on anglers on Canyon Ferry Reservoir. Surveys included examination of catch for hatchery impregnated pigments, scale and vertebrae collection for strain evaluation research.

1989-1991 Conservation Director

Montana Wildlife Federation Bozeman, Montana

Duties: I administered the legislative lobby efforts of Montana's largest conservation organization which included bill drafting, legal research, coalition development, opinion poll design grass-roots network development, and coordinating and preparing hearing testimony. Other duties included grant development, education, fundraising and local chapter establishment.

Awards received

Wildlife Professional of the Year-Montana Wildlife Federation 1991.

John L. Wachsmuth

Montana Fish, Wildlife and Parks

490 N. Meridian Rd.

Kalispell, Mt. 59901

email: jwr1@digisys.net

Education	1975B1980	University of Montana	Missoula, Montana
	B. S.	Bachelor of Science	Resource Management School of Forestry
	1974-75	McAllister College	St. Paul, Minnesota
	1974	Minnesota Outward Bound	Ely, Minnesota
Professional Experience	1993-current	Montana Fish, Wildlife and Parks	Kalispell, Montana
		Northwest Montana Clean Lakes Coordinator	
		Duties: Coordinates with the Flathead Basin Commission (FBC) and Montana	

DEQ to collect water quality data, protect lakeshore habitat and educate and network with the public.

1984B1997 BPA Funded Hungry Horse Mitigation Project Montana FW and Parks, Kalispell, MT.

Fisheries Tech III/Hungry Horse Crew Chief

Assists project biologist in fishery research required to determine water levels needed to protect and enhance important fisheries in Hungry Horse Reservoir

Led the field crew on Hungry Horse Reservoir and oversaw project personnel to collect and catalog data pertaining to primary production, zooplankton, benthos, aquatic and terrestrial insects and fisheries population dynamics

Designed and implemented a Volunteer Lake Monitoring Program for Montana FW and Parks in Northwestern Montana with 20 lakes being monitored since 1993

Working with current lake associations in Montana FW and Parks Region 1 to help them develop Lake Stewardship programs for their individual lakes

Currently working on fishery habitat enhancement projects using biotechnical approaches to stabilize stream banks and riparian areas; Working with private landowners to help them develop better land management practices surrounding fisheries habitat on their land

1981B1983 BPA Funded Swan River Micro-Hydro Study Montana FW and Parks, Kalispell, Mt.

Fisheries Tech II

Conducted stream habitat surveys concerning fisheries habitat for Bull trout and westslope cutthroat trout on the Swan River and its tributaries

Sampled fish populations by electrofishing and migrant traps to capture up-and downstream migrant fish for estimates of population size, species, constituent and sex ratios

Monitored stream temperatures in tributary streams of the Swan River

Compiled data and entered on computers for data analysis and graphics for report preparation

1980B1981 Sauger, Shovelnose Sturgeon Study on the Yellowstone River and Its Tributaries, Montana FW and Parks Region 7 Miles City, Mt.

Fisheries Tech I

Used electrofishing equipment to stun and capture fish for species identification and length and weight measurements; Fin clipping and tagging for mark recapture population estimates

Conducted creel survey on Paddlefish

As directed, provided technical, operational and on-the-ground support to other fisheries biologists for the successful completion of field surveys and inventory of fish populations

Section 10. Information/technology transfer

Project results will be published in BPA reports and, where applicable, peer reviewed journal articles. Monthly or quarterly reports to all agency and citizen groups will be available via Kootenai Watershed web page (to be designed and available for access by spring 1998).